PATENT

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METHOD FOR GRADUALLY DEFORMING AN INITIAL OBJECT DISTRIBUTION IN A HETEROGENEOUS MEDIUM, GENERATED BY SIMULATION OF AN OBJECT TYPE STOCHASTIC MODEL, TO BEST ADAPT IT TO IMPOSED PHYSICAL CONSTRAINTS

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ABSTRACT

- Geostatistical method for gradually deforming an initial distribution of objects, of geologic type for example, from measurements or observations, so as to best adapt it to imposed physical constraints of hydrodynamic type for example.

- The objects being distributed in a zone of a heterogeneous medium according to a Poisson point process in form of figurative points with a point density $\lambda(x)$ that varies according to their position (x) in the zone, a realization of a uniform random vector according to which the position of each object is defined while respecting density $\lambda(x)$ is formed, and the uniform random vector is gradually modified according to a gradual deformation process so as to obtain gradual migration of each object until a final realization best adjusted to parameters relative to the structure of the medium, such as hydrodynamic parameters, is obtained.

- Applications : geostatistical modelling of heterogeneous reservoirs consisting of various objects : fractures, channels, vesicles, etc., for example.